

**TAG: Learning Set 3 Intro &
3.1 Understand the Challenge**

Name _____
Hour _____ Date _____

How Will Carrying a Load Affect Your Vehicle's Performance?

Read p. 155.

What is the goal of Learning Set 3?



3.1 Understand the Challenge

Read p. 156-157.

Write 3 basic principles you learned earlier about forces.

1.

2.

3.

Get Started: Read pg. 157

What will you watch and observe about your car once you have added a 100g mass?



Attaching Load(s) to Your Propeller Car (pgs. 157-158).

Draw a diagram showing how to attach the loads to your car.

Procedure: (pgs. 158 & 159) Follow the procedure with your group.

	Distance (cm)	Time (sec)	Speed (cm/sec)	Veer (cm)
No load				
100g mass				

Reflect (pg. 159): Answer these questions. Try to use science vocabulary in your answers (force, mass, motion, acceleration, net force, etc.)

1. What is different about your propeller car's performance when it is carrying a load compared to when it is not carrying a load?



2. Why do you think your car's performance is different with and without a load? Sketch a force diagram showing the forces when your car is carrying a load and when it is not.

3. Which forces change when a load is added to the car? What other forces do you think you might change to make your car perform better while carrying a load?

4. What do you need to learn more about to maximize your car's performance while carrying a load?



Discuss answers with the class. How did variations in the design of each group's car make a difference when the cars had to carry a load?

Identify Criteria and Constraints (pg. 159)

Identify the criteria and constraints for your car in the chart:

Criteria	Constraints

Update the Project Board (pg. 160): Update the "What do we need to investigate?" column with questions you need to answer in order to make your car better able to carry a load.



What's the Point? (pg. 160) What is the main idea of this section? (Should be in a sentence)